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	First Named Inventor	
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Assistant Commissioner for Patents
BOX PATENT APPLICATION
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Sir:

Enclosed for filing is a complete patent application, entitled "METHOD AND APPARATUS FOR EVALUATING A FINANCIAL ACCOUNT APPLICANT" invented by:

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and including the following documents:

Specification including Claims - 31 pages
Abstract of the Disclosure
Drawings - 2 sheets
Return Receipt Postcard
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This application claims the benefit of prior filed co-pending provisional patent application number 60/213,367 filed on June 23, 2000.

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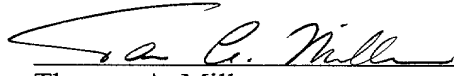
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PATENT TRADEMARK OFFICE

Respectfully submitted,

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Date: 8/31/2000
cc: Docketing
Wkg Atty. SLW
Resp Atty. TAM

METHOD AND APPARATUS FOR EVALUATING A
FINANCIAL ACCOUNT APPLICANT

RELATED APPLICATIONS

This application claims the benefit under 35 U.S.C. § 119 of U.S. Provisional Application No. 60/168,272, entitled METHOD AND APPARATUS FOR USE IN ENTERING FINANCIAL DATA INTO AN ELECTRONIC DEVICE, filed on December 1, 1999; U.S. Provisional Application No. 06/168,276, entitled METHOD AND APPARATUS FOR AN ELECTRONIC CHECK PAYMENT SYSTEM, filed on December 1, 1999; U.S. Provisional Application No. 60/168,273, entitled METHOD AND APPARATUS FOR PROVIDING ONLINE FINANCIAL ACCOUNT SERVICES, filed on December 1, 1999; and U.S. Provisional Application No. 60/213,367, entitled SOFTWARE PROGRAM, filed on June 23, 2000.

BACKGROUND OF THE INVENTION

The invention relates to a system for evaluating applicants for financial accounts and particularly, to a method and apparatus for automatically analyzing the applicants' credit bureau data, financial account information and demographic data to evaluate the financial account applicants.

Known methods of evaluating financial account applicants do not take advantage of technological tools. In particular, when a financial institution receives from a potential customer an application for opening a financial account, a financial institution employee must first verify the applicant's identity, then call or contact electronically a credit reporting bureau to get credit rating information for the applicant, and then call or contact electronically an account verification system to get information relating to present and past financial institution accounts held in the name of the applicant. Based on this information, the employee must then make an independent decision whether the financial institution will open the account for the applicant and what kind of products or services to offer the applicant.

The lack of a centralized method and apparatus for conducting credit bureau and account information investigations as well as determining whether to offer the applicant the product or service in question creates a great deal of inconsistency within the financial

institution in this decision making process. For example, different employees of the financial institution may evaluate the credit bureau data and account information differently. This could result in the financial institution accepting more risk than it actually deems desirable, or alternatively, turning away customers needlessly. Moreover,

5   even if the applicant is accepted, the financial institution employee may not be aware of other products or services that the financial institution would like to offer to the customer, or may simply neglect to offer such products or services.

SUMMARY OF THE INVENTION

10   Accordingly, the invention provides a method and apparatus for automatically evaluating a financial account applicant. The apparatus that implements the method is a network or system of computers and software programs resident on the computers. The method includes verifying the identity of the applicant, accessing credit bureau data for the applicant, accessing account information for the applicant, generating a score for the

15   applicant based on the credit bureau data and the account information, and determining whether to open the financial account based on the score. The score can be either a single composite score, or can amount to a number of scores, for example, one for the credit bureau data and another for the account information. In one embodiment of the invention, the method includes using the score or scores to determine which products and services of

20   the financial institution should be offered to the applicant. For example, some applicants may only qualify for a basic checking and savings account, while other applicants may qualify for debit or credit cards for other products or services of the financial institution. These products or services are offered automatically by the system embodying the invention based on the score for the applicant. In another embodiment, the method

25   includes the automatic retrieval and evaluation of demographic data relevant to the applicant.

By providing an automated method and apparatus for evaluating financial account applications, a financial institution can improve the consistency with which applications are evaluated, take advantage of cross-selling opportunities for different products and

30   services of the financial institution on a more consistent basis, reduce the amount of employee time required to evaluate the applications, and be assured of having a consistent risk assessment for new account applications.

Other features and advantages of the invention are set forth in the following drawings, detailed description and claims.

BRIEF DESCRIPTION OF THE DRAWINGS

Figure 1 is a schematic block diagram of a network embodying the invention.

Figure 2 is a flow chart illustrating the decisioning process of the network shown in

5   Fig. 1.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

Before one embodiment of the invention is explained in full detail, it is to be understood that the invention is not limited in its application to the details of construction

10   and the arrangement of components set forth in the following description or illustrated in the following drawings. The invention is capable of other embodiments and of being practiced or of being carried out in various ways. Also, it is to be understood that the phraseology and terminology used herein is for the purpose of description and should not be regarded as limiting. The use of "including" and "comprising" and variations thereof

15   herein is meant to encompass the items listed thereafter and equivalents thereof as well as additional items.

Shown in FIG. 1 of the drawings is a network 10 for automatically evaluating a financial account applicant embodying the invention. One commercially operational example of a network embodying the invention is the Qualifile™ brand network and

20   service operated and offered by eFunds Corporation of Milwaukee, Wisconsin. In general terms, the network includes a gateway server 14 through which the financial institutions using the network are connected to the network. All connections shown in the figure denote two-way communication between the connected entities. A preliminary financial account search database 18 (such as the ChexSystems™ brand database offered by eFunds

25   Corporation) is also connected to the gateway server 14.

The network also includes an application server 22 connected to the gateway server 14 and a plurality of application modules 26, 30, 34, 38, 42 and 44, connected to the application server 22. While many different application modules can be useful in the context of a network for automatically evaluating financial account applicants, the

30   application modules shown in the figure include a customer set up module 26, a consumer search module 30, a financial account information data store module 34, a demographics database module 38, a credit bureau access module 42, and a scoring model module 44.

All of the elements of the network 10 are computer systems, including both hardware and software components, that are networked to effect the end result of

automatically analyzing financial account information, credit bureau information and demographic information for the applicant, provide a score or scores to the financial institution that are relevant to the applicant, evaluate whether to accept the application and determine whether there are cross-selling opportunities for the financial institution to offer

5   additional products and services to the applicant. While the network 10 is shown as including the gateway server 14, application server 22, preliminary search database 18 and application modules 26, 30, 34, 38, 42 and 44 as separate linked platforms, the entire network could be integrated into a single hardware/software platform which theoretically would reduce processing time, simplify the network architecture, and reduce cost

10   associated with operating the system.

As shown in FIG. 1, the gateway server 14 provides an avenue for the financial institution 48 to communicate with the network 10, and for the network 10 to communicate with the financial institution 48. While only the single financial institution 48 is shown in the drawing, the system is intended to be accessed by many client financial

15   institutions. In the preferred embodiment, the gateway server 14 is the Online Network Exchange ("ONE")^{TM} brand networking system offered and operated by eFunds Corporation of Milwaukee, Wisconsin. However, other computer hardware and software based networks can be substituted for the ONE brand computer network. Moreover, other portals can be created that allow direct connection of the financial institution 48 with the

20   application server 22. For example, an Internet server (not shown) could be connected to the application server 22 so that any financial institution with access to the Internet could access the Internet server thereby opening a portal to the application server 22 over the Internet.

The preliminary financial account information database 18 is connected to the

25   gateway server 14. The preliminary financial account database 18 allows a quick retrieval of financial account information based upon an applicant's last name, first name, social security number, and residence for the past five years. The database 18 is capable of retrieving information such as the frequency of new financial account applications made by the applicant within a given time period, and information relating to accounts that have

30   been closed "for cause," such as for checks returned for non-sufficient funds ("NSF").

The customer setup data module 26 includes at least one workstation (not shown) for entering information that is specific to each participating financial institution 48. Specifically, each financial institution has a set of policy rules defined by the respective financial institution, that determine when the evaluation process would be terminated, e.g.,

if the results of the preliminary database search determine that the applicant had a previous financial account closed "for cause." Additionally, the customer setup data module workstation is used to input and store the criteria that the financial institution 48 uses to evaluate whether to accept the applicant, and also to establish what cross-selling products and services the financial institution 48 has and would be willing to offer to each applicant. Of course, workstations can be added as necessary to accommodate increased activity from the financial institution. When the financial institution account is established, each financial institution is provided with a security code that will grant the financial institution access to the network. The customer setup data module 26 also includes tax rate and billing data for each financial institution 48.

The consumer search module 30 is a database of links that "tie" together a collection of data bearing some relevance to the applicant, e.g., social security numbers that were issued at a given time or in a given place, etc. The applicant information, i.e., last name, first name, social security number, and place of residence for the last five years is entered into the consumer search module to find the link for the applicant, if one exists. While various databases are available that perform this function, the database of the preferred embodiment is offered by Acxiom Corporation of Conway, Arkansas under the name Abilitec (at least a portion of which is described in U.S. Pat. No. 6,073,140, which is incorporated herein by reference). In another preferred embodiment of the invention (not shown), the network includes consumer search software providing database links that are internal to the application server, as well as an external consumer search module such as is provided by Acxiom Corporation and other companies to provide redundant linking capabilities.

The operational data store module 34 is a database that includes financial account and retail purchase history information such as previous account application inquiries for the applicant, financial account closures, information regarding retail items purchased and paid for, and check printing order histories. In other embodiments, the operational data store module can be expanded to comprehensively include the financial account information, retail purchase history, demographic information and credit bureau information. This would reduce the number of modules that the application server 22 must access in effecting the evaluation.

The interactive demographics database module 38 is a database of demographic information such as household income, home ownership status, education level, shopping practices, such as whether the applicant shops over the Internet, commonly purchased

reading material, place of residence, marital status, etc. While there are many different and suitable demographic databases that can be used with the network, an appropriate demographics database is offered by Acxiom Corporation of Conway, Arkansas.

The network credit bureau access module 42 is simply a software based communication pathway to any one of the three major credit bureaus: Experian, Trans Union or Equifax. These credit bureaus provide a credit report which is acquired by the credit bureau access module 42 from the credit bureaus. The module 42 "packages" the report for the application server 22 and returns the repackaged report to the application server 22.

The scoring model module 44 includes software that takes either some all of the data acquired by the application server 22 and the modules 26, 30, 34, 38 and 42 connected thereto and provides a score or scores for each applicant based on an algorithm that defines a risk model. Preferably, the algorithm is a logistic regression algorithm that generates a score for each applicant which score predicts the likelihood that the applicant will be an account abuser. While various risk models or algorithms might be appropriate for use with the network 10, the algorithm of the preferred embodiment generates a score ranging between 900 (indicating that there is little risk to the financial institution) and 100 (indicating that there is a high risk to the financial institution). The risk model focuses on past and present account abuse. Specifically, those applicants whose scores are in approximately the lowest twenty (20) percent of the score range (i.e., approximately between 100 and 260) tend to have more unpaid NSF items on file with major retailers, have multiple financial account applications requested, have had at least one account closed for cause, have a less established or non-existent credit history, have one or more repossessed or charged-off trade lines, have one or more open trade lines that are thirty (30) to eighty (80) days delinquent, and/or have had more derogatory items than average over the past three years. The score or scores are returned to the application server for processing and comparison with the financial institutions' policy rules and guidelines.

In operation, the financial institution 14 contacts the administrator (not shown) of the network 10. The administrator sets up a participation account for each separate financial institution 48 using the workstation of the customer set up module 26. Upon creating the participant account, the financial institution 48 is issued a security code and provides to the network administrator a list of policy rules and a list of financial account application evaluation guidelines. The rules and guidelines may be selected from the list below and may be chosen in any combination.

- DRIVER LICENSE INVALID FORMAT FOR STATE
- DRIVER LICENSE NOT ON STATE FILE
- DRIVER LICENSE DOB DOESN'T MATCH INQUIRY DOB
- WARM ADDRESS FOUND
- PHONE VALIDATION: INVALID PHONE #
- PHONE VALIDATION: MOBILE PHONE #
- PHONE VALIDATION: PAGER PHONE #
- PHONE VALIDATION: SPECIAL PHONE #
- PHONE VALIDATION: CELLULAR PHONE #
- PHONE VALIDATION: TEST PHONE #
- PHONE VALIDATION: CELLULAR, PAGER OR MOBILE PH#
- PHONE VALIDATION: PERSONAL COMMUNICATION SERVICE
- SSN/DOB: SSN AVAILABLE AT AGE VS. CURRENT AGE
- SSN/DOB: SSN AVAILABLE BEFORE DATE OF BIRTH
- SSN/DOB: SSN ISSUED WITHIN LAST 5 YEARS
- PHONE/ZIP: PHONE NUMBER NOT IN ZIP CODE
- NUMBER OF INQUIRIES IN THE LAST 30 DAYS
- NUNBER OF INQUIRIES IN THE LAST 60 DAYS
- NUMBER OF INQUIRIES IN THE LAST 90 DAYS
- NUMBER OF INQUIRIES IN THE LAST 180 DAYS
- NUMBER OF INQUIRIES IN THE LAST 1 YEAR
- NUMBER OF DAYS SINCE MOST RECENT INQUIRY
- NUMBER OF DAYS SINCE FIRST INQUIRY
- AVERAGE NUMBER OF DAYS BETWEEN INQUIRIES IN THE PAST 1 YEAR
- NUMBER OF INQUIRIES IN THE LAST 90 DAYS
- NUMBER OF DIFFERENT MASTER BANKS POSTING INQUIRIES IN THE PAST 180 DAYS
- NUMBER OF CHECK PRINTING ORDERS IN THE LAST 30 DAYS
- NUMBER OF CHECK PRINTING ORDERS IN THE LAST 60 DAYS
- NUMBER OF CHECK PRINTING ORDERS IN THE LAST 90 DAYS
- NUMBER OF CHECK PRINTING ORDERS IN THE LAST 180 DAYS

- NUMBER OF CHECK PRINTING ORDERS IN THE LAST YEAR
- NUMBER OF CHECK PRINTING ORDERS IN THE LAST 2 YEARS
- NUMBER OF CHECK PRINTING ORDERS IN THE LAST 3 YEARS
- NUMBER OF DIFFERENT CHECK PRINTING ACCOUNTS
- NUMBER OF DIFFERENT BANKS ORDERING CHECKS IN THE PAST 1 YEAR
- NUMBER OF DAYS SINCE MOST RECENT CHECK PRINTING ORDER
- NUMBER OF DAYS SINCE FIRST CHECK PRINTING ORDER
- MINIMUM NUMBER OF DAYS BETWEEN ORDERING CHECKS IN THE PAST YEAR
- NUMBER OF CHECKS ORDERED IN THE LAST 30 DAYS
- NUMBER OF CHECKS ORDERED IN THE LAST 60 DAYS
- NUMBER OF CHECKS ORDERED IN THE LAST 90 DAYS
- NUMBER OF CHECKS ORDERED IN THE LAST 180 DAYS
- NUMBER OF CHECKS ORDERED IN THE LAST 1 YEAR
- NUMBER OF CHECKS ORDERED IN THE LAST 2 YEARS
- NUMBER OF CHECKS ORDERED IN THE LAST 3 YEARS
- MINIMUM NUMBER OF CHECKS ORDERED
- MAXIMUM NUMBER OF CHECKS ORDERED
- AVERAGE NUMBER OF CHECKS ORDERED
- NUMBER OF OPEN RETAIL ITEMS IN THE LAST 30 DAYS
- NUMBER OF OPEN RETAIL ITEMS IN THE LAST 60 DAYS
- NUMBER OF OPEN RETAIL ITEMS IN THE LAST 90 DAYS
- NUMBER OF OPEN RETAIL ITEMS IN THE LAST 180 DAYS
- NUMBER OF OPEN RETAIL ITEMS IN THE LAST YEAR
- NUMBER OF OPEN RETAIL ITEMS IN THE LAST 2 YEARS
- NUMBER OF OPEN RETAIL ITEMS IN THE LAST 3 YEARS
- TOTAL DOLLAR AMOUNT OF OPEN RETAIL ITEMS, IN THE LAST 30 DAYS
- TOTAL DOLLAR AMOUNT OF OPEN RETAIL ITEMS IN THE LAST 60 DAYS

- TOTAL DOLLAR AMOUNT OF OPEN RETAIL ITEMS IN THE LAST 90 DAYS
- TOTAL DOLLAR AMOUNT OF OPEN RETAIL ITEMS, IN THE LAST 180 DAYS
- TOTAL DOLLAR AMOUNT OF OPEN REAIL ITEMS, IN THE LAST YEAR
- TOTAL DOLLAR AMOUNT OF OPEN RETAIL ITEMS, IN THE LAST 2 YEARS
- TOTAL DOLLAR AMOUNT OF OPEN RETAIL ITEMS, IN THE LAST 3 YEARS
- NUMBER OF PAID RETAIL ITEMS IN THE LAST 30 DAYS
- NUMBER OF PAID RETAIL ITEMS IN THE LAST 60 DAYS
- NUMBER OF PAID RETAIL ITEMS IN THE LAST 90 DAYS
- NUMBER OF PAID RETAIL ITEMS IN THE LAST 180 DAYS
- NUMBER OF PAID RETAIL ITEMS IN THE LAST YEAR
- NUMBER OF PAID RETAIL ITEMS IN THE LAST 2 YEARS
- NUMBER OF PAID RETAIL ITEMS IN THE LAST 3 YEARS
- TOTAL DOLLAR AMOUNT OF PAID RETAIL ITEMS, IN THE LAST 30 DAYS
- TOTAL DOLLAR AMOUNT OF PAID RETAIL ITEMS, IN THE LAST 60 DAYS
- TOTAL DOLLAR AMOUNT OF PAID RETAIL ITEMS, IN THE LAST 90 DAYS
- TOTAL DOLLAR AMOUNT OF PAID RETAIL ITEMS, IN THE LAST 180 DAYS
- TOTAL DOLLAR AMOUNT OF PAID RETAIL ITEMS, IN THE LAST YEAR
- TOTAL DOLLAR AMOUNT OF PAID RETAIL ITEMS, IN THE LAST 2 YEARS
- TOTAL DOLLAR AMOUNT OF PAID RETAIL ITEMS, IN THE LAST 3 YEARS
- TOTAL (OPEN + PAID) NUMBER OF SCAN ITEMS IN THE PAST 1 YEAR

- TOTAL (OPEN + PAID) NUMBER OF SCAN ITEMS IN THE PAST 3 YEARS
- DAYS SINCE MOST RECENT OPEN RETAIL ITEM
- DAYS SINCE MOST RECENT PAID RETAIL ITEM
- MAXIMUM DOLLAR AMOUNT OF OPEN RTAIL ITEMS
- MAXIMUM DOLLAR AMOUNT OF PAID RETAIL ITEMS
- MINIMUM CHECK NUMBER ON OPEN RETAIL ITEMS
- MINIMUM CHECK NUMBER ON PAID RETAIL ITEMS
- MINIMUM DAYS TO PAY AN OPEN RETAIL ITEM
- MAXIMUM DAYS TO PAY AN OPEN RETAIL ITEM
- EPISODE SPAN OF ALL OPEN AND AID RETAIL ITEMS
- CLOSURE FLAG: ZERO OR ONE CLOSURE IN THE LAST 30 DAYS
- CLOSURE FLAG: ZERO OR ONE CLOSURE IN THE LAST 60 DAYS
- CLOSURE FLAG: ZERO OR ONE CLOSURE IN THE LAST 180 DAYS
- CLOSURE FLAG: ZERO OR ONE CLOSURE IN THE LAST YEAR
- CLOSURE FLAG: ZERO OR ONE CLOSURE IN THE LAST 2 YEARS
- CLOSURE FLAG: ZERO OR ONE CLOSURE IN THE LAST 3 YEARS
- CLOSURE FLAG: ZERO OR ONE CLOSURE IN THE LAST 5 YEARS
- FRAUD CLOSURE FLAG
- DAYS SINCE MOST RECENT CLOSURE
- DAYS SINCE FIRST CLOSURE
- AVERAGE NUMBER OF DAYS BETWEEN CLOSURES
- PRESENCE OF ONE OR MORE OPEN RETAIL ITEMS OVER THE PAST 3 YEARS
- TOTAL NUMBER OF INQUIRIES IN THE PAST 12 MONTHS
- PRESENCE OF ONE OR TWO CHECK ORDERS FROM DIFFERENT FINANCIAL INSTITUTIONS IN THE LAST YEAR
- PRESENCE OF ONE RETAIL ITEM IN THE PAST 3 YEARS
- PRESENCE OF TWO OR THREE RETAIL ITEMS IN THE PAST 3 YEARS
- PRESENCE OF FOUR OR MORE RETAIL ITEMS IN THE PAST 3 YEARS
- PRESENCE OF ONE CLOSURE IN THE PAST 6 MONTHS
- PRESENCE OF ONE CLOSURE, 6 MONTHS TO 5 YEARS AGO

- TOTAL NUMBER OF INQUIRIES FROM DIFFERENT FINANCIAL INSTITUTIONS IN THE LAST 6 MONTHS
- AVERAGE NUMBER OF DAYS BETWEEN INQUIRIES IS 0-90 DAYS
- AVERAGE NUMBER OF DAYS BETWEEN INQUIRIES IS GREATER THAN 90 DAYS
- TOTAL NUMBER OF CHECK ORDERS IN THE LAST 90 DAYS
- MINIMUM NUMBER OF DAYS BETWEEN CHECK ORDERS IS 180 DAYS OR MORE
- PRESENCE OF A RETAIL ITEM WITHIN THE LAST YEAR
- PRESENCE OF ONE CLOSURES IN THE PAST 5 YEARS
- NO RETAIL ITEMS IN THE PAST 3 YEARS

The financial institution also provides a list of credit policy exclusions and credit review guidelines. The exclusions and guidelines may be chosen by the financial institution from the list below in any number and in any combination.

- TOTAL NUMBER OF TRADES
- TOTAL NUMBER OF TRADES PRESENTLY CURRENT REPORTED WITHIN 6 MONTHS OF PROFILE DATE
- TOTAL NUMBER OF TRADES EVER 30 OR MORE DAYS DELINQUENT OR DEROGATORY
- TOTAL NUMBER OF TRADES EVER 60 OR MORE DAYS DELINQUENT OR DEROGATORY
- WORST STATUS EVER ON TRADES OPENED WITHIN 36 MONTHS OF PROFILE DATE
- WORST PRESENT STATUS ON OPEN TRADES OPENED WITHIN 24 MONTHS OF PROFILE DATE
- AVERAGE AGE, IN MONTHS, OF ALL TRADES
- MONTHS SINCE MOST RECENT SATISFACTORY STATUS ON ANY TRADE OPENED MORE THAN 6 MONTHS
- MONTHS SINCE MOST RECENT 90 OR MORE DAYS DELINQUENCY OR DEROGATORY ITEM ON ANY TRADE
- TOTAL NUMBER OF INQUIRIES FOR CREDIT PURPOSES MADE WITHIN 12 MONTHS OF PROFILE DATE

- PERCENT OF PROFILE CONSISTING OF TRADES 30 OR MORE DAYS DELINQUENT OR DEROGATORY
- PERCENT OF PROFILE CONSISTING OF TRADES 60 OR MORE DAYS DELINQUENT OR DEROGATORY
5
- TOTAL NUMBER OF OPEN, PAID, OR CLOSED BANKCARD TRADES
- TOTAL NUMBER OF OPEN, PAID, CLOSED, OR INACTIVE BANKCARD TRADES
- TOTAL NUMBER OF BANKCARD TRADES NEVER REPORTED DELINQUENT OR DEROGATORY
10
- AVERAGE AGE, IN MONTHS, OF ALL BANKCARD TRADES
- PERCENT OF PROFILE CONSISTING OF BANKCARD TRADES NEVER REPORTED DELINQUENT OR DEROGATORY
- TOTAL NUMBER OF FINANCE INSTALLMENT TRADES OPENED WITHIN 12 MONTHS OF PROFILE DATE
15
- TOTAL NUMBER OF INSTALLMENT TRADES OPENED WITHIN 12 MONTHS OF PROFILE DATE
- TOTAL NUMBER OF INSTALLMENT TRADES PRESENTLY 30 OR MORE DAYS DELINQUENT OR DEROGATORY
- TOTAL NUMBER OF OPEN, PAID, CLOSED, OR INACTIVE
20
REVOLVING TRADES
- TOTAL NUMBER OF OPEN REVOLVING TRADES
- WORST STATUS EVER ON REVOLVING TRADES OPENED WITHIN 36 MONTHS OF PROFILE DATE
- WORST PRESENT STATUS ON OPEN REVOLVING TRADE
25
- OVERALL BALANCE/LIMIT RATIO ON ALL OPEN RETAIL REVOLVING TRADES OPENED WITHIN 12 MONTHS OF PROFILE DATE
- APPLICANT AGE CALCULATED AT BUREAU
- TOTAL NUMBER OF OPEN/CLOSED TRADES WITH DELINQUENT
30
BALANCES OR AMOUNTS PAST DUE REPORTED WITHIN 12 MONTHS OF PROFILE DATE
- TOTAL NUMBER OF BANKRUPTCY TRADELINES EVER

- TOTAL NUMBER OF DEROGATORY PUBLIC RECORDS WHERE AMOUNT IS GREATER THAN $250
- TOTAL NUMBER OF BANKRUPTCY PUBLIC RECORDS
- TOTAL OUTSTANDING BALANCE ON ALL OPEN TRADES
- TOTAL OF CREDIT LIMIT ON ALL OPEN TRADES
- OVERALL BALANCE/LIMIT RATION ON ALL OPEN TRADES REPORTED WITHIN 6 MONTHS OF PROFILE DATE
- AGE, IN MONTHS, OF OLDEST TRADE
- TOTAL OUTSTANDING BALANCE ON ALL OPEN AUTO TRADES
- WORST STATUS EVER ON AN AUTO TRADE
- TOTAL NUMBER OF OPEN BANKCARD TRADES
- TOTAL OUTSTANDING BALANCE ON ALL OPEN BANKCARD TRADES
- TOTAL CREDIT LIMIT ON ALL OPEN BANKCARD TRADES
- OVERALL BALANCE/LIMIT RATIO ON ALL OPEN BANKCARD TRADES REPORTED WITHIN 6 MONTHS OF PROFILE DATE
- TOTAL OUTSTANDING BALANCE ON ALL OPEN REVOLVING TRADES
- TOTAL CREDIT LIMIT ON ALL OPEN REVOLVING TRADES
- OVERALL BALANCE/LIMIT RATIO ON ALL OPEN REVOLVING TRADES REPORTED WITHIN 6 MONTHS OF PROFILE DATE
- CREATE YOUR OWN CREDIT ATTRIBUTES USING BUREAU DATA
- ANY SCORE AVAILABLE AT YOUR BUREAU OF CHOICE, FOR EXAMPLE, FICO SCORE, MDS BANKRUPTCY SCORE, BEACON SCORE, ETC.
- TOTAL NUMBER OF TRADES
- TOTAL NUMBER OF TRADES PRESENTLY CURRENT REPORTED WITHIN 6 MONTHS OF PROFILE DATE
- TOTAL NUMBER OF TRADES EVER 30 OR MORE DAYS DELINQUENT OR DEROGATORY
- TOTAL NUMBER OF TRADES EVER 60 OR MORE DAYS DELINQUENT OR DEROGATORY

- WORST STATUS EVER ON TRADES OPENED WITHIN 36 MONTHS OF PROFILE DATE
- WORST PRESENT STATUS ON OPEN TRADES OPENED WITHIN 24 MONTHS OF PROFILE DATE
- AVERAGE AGE, IN MONTHS, OF ALL TRADES
- MONTHS SINCE MOST RECENT SATISFACTORY STATUS ON ANY TRADE OPENED MORE THAN 6 MONTHS
- MONTHS SINCE MOST RECENT 90 OR MORE DAYS DELINQUENCY OR DEROGATORY ITEM ON ANY TRADE
- TOTAL NUMBER OF INQUIRIES FOR CREDIT PURPOSES MADE WITHIN 12 MONTHS OF PROFILE DATE
- PERCENT OF PROFILE CONSISTING OF TRADES 30 OR MORE DAYS DELINQUENT OR DEROGATORY
- PERCENT OF PROFILE CONSISTING OF TRADES 60 OR MORE DAYS DELINQUENT OR DEROGATORY
- TOTAL NUMBER OF OPEN, PAID, OR CLOSED BANKCARD TRADES
- TOTAL NUMBER OF OPEN, PAID, CLOSED, OR INACTIVE BANKCARD TRADES
- TOTAL NUMBER OF BANKCARD TRADES NEVER REPORTED DELINQUENT OR DEROGATORY
- AVERAGE AGE, IN MONTHS, OF ALL BANKCARD TRADES
- PERCENT OF PROFILE CONSISTING OF BANKCARD TRADES NEVER REPORTED DELINQUENT OR DEROGATORY
- TOTAL NUMBER OF FINANCE INSTALLMENT TRADES OPENED WITHIN 12 MONTHS OF PROFILE DATE
- TOTAL NUMBER OF INSTALLMENT TRADES OPENED WITHIN 12 MONTHS OF PROFILE DATE
- TOTAL NUMBER OF INSTALLMENT TRADES PRESENTLY 30 OR MORE DAY DELINQUENT OR DEROGATORY
- TOTAL NUMBER OF OPEN, PAID, CLOSED, OR INACTIVE REVOLVING TRADES
- TOTAL NUMBER OF OPEN REVOLVING TRADES

- WORST STATUS EVER ON REVOLVING TRAES OPENED WITHIN 36 MONTHS OF PROFILE DATE
- WORST PRESENT STATUS ON OPEN REVOLVING TRADE
- OVERALL BALANCE/LIMIT RATIO ON ALL OPEN RETAIL REVOLVING TRADES OPENED WITHIN 12 MONTHS OF PROFILE DATE
- APPLICANT AGE CALCULATED AT BUREAU
- TOTAL NUMBER OF OPEN/CLOSED TRADES WITH DELINQUENT BALANCES OR AMOUNTS PAST DUE REPORTED WITHIN 12 MONTHS OF PROFILE DATE
- TOTAL NUMBER OF BANKRUPTCY TRADELINES EVER
- TOTAL NUMBER OF DEROGATORY PUBLIC RECORDS WHERE AMOUNT IS GREATER THAN $250
- TOTAL NUMBER OF BANKRUPTCY PUBLIC RECORDS
- TOTAL OUTSTANDING BALANCE ON ALL OPEN TRADES
- TOTAL OF CREDIT LIMIT ON ALL OPEN TRADES
- OVERALL BALANCE/LIMIT RATIO ON ALL OPEN TRADES REPORTED WITHIN 6 MONTHS OF PROFILE DATE
- AGE, IN MONTHS, OF OLDEST TRADE
- TOTAL OUTSTANDING BALANCE ON ALL OPEN AUTO TRADES
- WORST STATUS EVER ON AN AUTO TRADE
- TOTAL NUMBER OF OPEN BANKCARD TRADES
- TOTAL OUTSTANDING BALANCE ON ALL OPEN BANKCARD TRADES
- TOTAL CREDIT LIMIT ON ALL OPEN BANKCARD TRADES
- OVERALL BALANCE/LIMIT RATIO ON ALL OPEN BANKCARD TRADES REPORTED WITHIN 6 MONTHS OF PROFILE DATE
- TOTAL OUTSTANDING BALANCE ON ALL OPEN REVOLVING TRADES
- TOTAL CREDIT LIMIT ON ALL OPEN REVOLVING TRADES
- OVERALL BALANCE/LIMIT RATIO ON ALL OPEN REVOLVING TRADES REPORTED WITHIN 6 MONTHS OF PROFILE DATE
- CREATE YOUR OWN CREDIT ATTRIBUTES USING BUREAU DATA

- ANY SCORE AVAILABLE AT YOUR BUREAU OF CHOICE, FOR EXAMPLE, FICO SCORE, MDS BANKRUPTCY SCORE, BEACON SCORE, ETC.

Additionally, if the financial institution 48 is interested in cross-selling products and services to a financial account applicant, the financial institution 48 also provides a list of such products and services, as well as a list of guidelines for evaluating which applicants are provided the opportunity to participate in those products and services. The security code, policy rules, evaluation guidelines, credit policy exclusions, credit review guidelines, and cross-selling products and services are all stored in the customer set up module 26.

When the financial institution 48 has an applicant that it wishes the network 10 to evaluate, the financial institution 48 logs on to the network 10 and enters its security code, along with the applicant's last name, first name, social security number, and place of residence for the last five years. The gateway server 14 immediately contacts the preliminary search database 18 which searches for information relating to financial accounts that have been closed "for cause" or for information indicating that a large number of applications have been submitted by applicant over a given period of time. The preliminary database search is used to quickly eliminate high-risk applicants. If the preliminary database search returns a "hit" relevant to the applicant, then the evaluation process is immediately terminated. If there are no "hits," the gateway server 14 passes the applicant information to the application server 22 which begins to electronically poll the modules in an attempt to amass the financial account information, demographic information, and credit bureau information that is necessary to perform the automatic evaluation of the applicant.

The application server 22 receives the applicant information from the gateway server 14, conducts a consumer search to search for links to data collections for the applicant, searches the operational data store module, searches for demographic data, and credit bureau data and transmits all of the data to the scoring model module 44 where the score or series of scores are generated. All of the data searches may be conducted using either exact matching logic or fuzzy logic, or both.

The risk model consists of three "scorecards." The scorecards are based on the availability of information. Scorecard 1 is for those inquiries in which only credit information is available. Similarly, scorecard 2 is for inquiries in which only debit bureau information is available. Scorecard 3 is for inquiries in which both credit and debit bureau information is present. The following table outlines the data (along with corresponding

variable names) required to create the segmentation logic necessary for developing the "scorecards."

FIELD NAME	LABEL
IV1	IV: # OF INQS LAST 0-1
IV365	IV: # OF INQS LAST 2- 365
CPCOR365	CP: # OF CHECK ORDERS LAST 365 DAYS
CPDOR365	CP: # OF DEPOSIT ORDERS LAST 365 DAYS
CPOOR365	CP: # OF OTHER ORDERS LAST 365 DAYS
SCAN999	# ALL LAST 3 YEARS
CVD0001S	CV: # OF HISTORIC CLOSURES PREVIOUS DAY
CVD0007S	CV: # OF HISTORIC CLOSURES 2-7 DAYS
CVD0014S	CV: # OF HISTORIC CLOSURES 8-14 DAYS
CVD0030S	CV: # OF HISTORIC CLOSURES 15-30 DAYS
CVD0060S	CV: # OF HISTORIC CLOSURES 31-60 DAYS
CVD0090S	CV: # OF HISTORIC CLOSURES 61-90 DAYS
CVD0180S	CV: # OF HISTORIC CLOSURES 91-180 DAYS
CVD0365S	CV: # OF HISTORIC CLOSURES 181-365 DAYS
CVD0730S	CV: # OF HISTORIC CLOSURES 366-730 DAYS
CVD1095S	CV: # OF HISTORIC CLOSURES 731-1095 DAYS
CVD1460S	CV: # OF HISTORIC CLOSURES 1096-1460 DAYS
CVD1825S	CV: # OF HISTORIC CLOSURES 1461-1825 DAYS
GBL007	CREDIT: DECEASED FLAG
ALL001	CREDIT: TOTAL NUMBER OF OPEN, PAID, OR CLOSED TRADES

In order to implement the segmentation logic, the following intermediate variables are created.

VARIABLE: **SUMCLS**
DESCRIPTION: Presence of closure in the last 1825 days
LOGIC: IF (CVD0001S > 0 OR CVD0007S > 0 OR CVD0014S > 0 OR CVD0030S > 0 OR CVD0060S > 0 OR CVD0090S > 0 OR CVD0180S > 0 OR CVD0365S > 0 OR CVD0730S > 0 OR CVD1095S > 0 OR CVD1460S> 0 OR CVD1825S > 0)
THEN SUMCLS = 1
ELSE SUMCLS = 0

VARIABLE: **SUMSCAN**
DESCRIPTION: Presence of scan activity in the last 3 years
LOGIC: IF SCAN999 > 0 THEN SUMSCAN = 1
ELSE SUMSCAN = 0

VARIABLE: **DEBIT001**
DESCRIPTION: Presence of Debit Bureau information
LOGIC: IF (SUMCLS > 0 OR SUMSCAN > 0 OR IV1 > 0 OR IV365 > 0 OR CPCOR365 > 0 OR CPDOR365 > 0 OR CPOOR365 > 0)
THEN DEBIT001 = 1
ELSE DEBIT001 = 0

VARIABLE: **GBL007**

DESCRIPTION: Deceased indicator
SOURCE: Credit reporting bureau database

VARIABLE: **ALL001**
DESCRIPTION: Total number of open, paid, or closed trades

5 Once the intermediate variables have been computed, the segmentation logic is created as follows:

IF GBL007 = 1 THEN SEGMENT = -1
ELSE IF ALL001 = 0 AND DEBIT001 = 0 THEN SEGMENT = 0
ELSE IF ALL001 > 0 AND DEBIT001 = 0 THEN SEGMENT = 1
10 ELSE IF ALL001 = 0 AND DEBIT001 > 0 THEN SEGMENT = 2
ELSE IF ALL001 > 0 AND DEBIT001 > 0 THEN SEGMENT = 3

Segment values have the following meanings:

-1 = Deceased
0 = No debit or credit information
15 1 = Credit Bureau information only
2 = Debit Bureau information only
3 = Credit and Debit Bureau information

For scorecard 1 (credit bureau data only), the attributes required in the scorecard are as follows:

Name	Label	Description
ALL001	TTL TRADE	Total number of open, paid, or closed trades
ALL078	TTL DEL-GE60	Total number of trades ever 60 or more days delinquent or derogatory
ALL504	WORST-EVER-OPEN36	Worst status ever on trades opened within 36 months of the profile date
ALL602	WORST-NOW OPEN OPEN24	Worst present status on open trades opened within 24 months of the profile date
ALL710	AGE-RECENT-SAT OPEN>6	Months since most recent satisfactory status on any trade opened more than 6 months
ALL740	AGE-RECENT-GE90	Months since most recent 90 or more days delinquency or derogatory item on any trade
ALL804	TTL INQ12	Total number of inquiries for credit purposes made within 12 months of the profile date
ALL904	PERCENT 60+ (OPC)	Percent of profile consisting of trades 60 or more days delinquent or derogatory
BAC001	TTL TRADE BNKCARD	Total number of open, paid, or closed bankcard trades
BAC002	TTL TRADE-OPCI BNKCARD	Total number of open, paid, closed, or inactive bankcard trades
BAC071	TTL SAT BNKCARD	Total number of bankcard trades never reported delinquent or derogatory
BAC703	AVG-AGE BNKCARD	Average age, in months, of all bankcard trades
BAC901	PERCENT NEVER DEL-OR-DEROG BNKCARD	Percent of profile consisting of bankcard trades never reported delinquent or derogatory
FIL022	TTL OPEN12 FINANCE INSTALL	Total number of finance installment trades opened within 12 months of the profile date

ILN064	TTL PRESENT-GE30 INSTALL	Total number of installment trades presently 30 or more days delinquent or derogatory
REV002	TTL TRADE-OPCI REV	Total number of open, paid, closed, or inactive revolving trades
REV003	TTL TRADE OPEN REV	Total number of open revolving trades
REV504	WORST-EVER-OPEN36 REV	Worst status ever on revolving trades opened within 36 months of the profile date
REV601	WORST-NOW OPEN REV	Worst present status on an open revolving trade
RTR404	BTL OPEN BAL OPEN12 RETAIL REV	Overall balance/limit ratio on all open retail revolving trades opened within 12 months of the profile date

To derive the "credit data only scorecard," the algorithm establishes attribute caps as follows:

5
$$BAC703=MIN(BAC703, 240);$$
$$ILN064=MIN(ILN064, 20);$$
$$RTR404=MIN(RTR404, 110);$$
$$ALL804=MIN(ALL804, 20);$$
$$FIL022=MIN(FIL022, 5).$$

The logical function "MIN" indicates that the lesser of the two operators is transferred into

10 the variable. The attributes and attribute caps are converted using the following mathematical functions:

$$SRBAC703=SQRT(BAC703);$$
$$ALL504B=(ALL504>1);$$
15
$$ALL710A=(ALL710<=12);$$
$$LNILN064=LOG(ILN064+1);$$
$$REV601A=REV601=1;$$
$$REV504F=REV504 >120;$$
$$SRALL804=SQRT(ALL804);$$
20
$$ALL602B=ALL602 >1;$$
$$ALL740B=(ALL740<=12);$$
$$LNFIL022=LOG(FIL022+1).$$

"SQRT" indicates the mathematical square root transformation, while "LOG" indicates the natural logarithm transformation. Additionally, the algorithm establishes or identifies

25 false zero relationships using the following logical statement:

$$IF \; REV504F=0 \; AND \; REV002=0 \; THEN \; REV504F=1.$$

The scoring algorithm then calculates the score.

30
```
SCOR=
  + 2.20169
  - (0.00946328   *      ALL904)
  + (0.07616756   *      SRBAC703)
```

- (0.39115484 * ALL504B)
+ (0.24159381 * ALL710A)
- (0.20654182 * LNILN064)
+ (0.19162188 * REV601A)
5   - (0.00599192 * RTR404)
- (0.04240944 * REV504F)
+ (0.0055761 * BAC901)
- (0.19366108 * SRALL804)
- (0.17019613 * ALL602B)
10   - (0.16300223 * ALL740B)
- (0.28859933 * LNFIL022).

The above algorithm outputs the variable SCOR, which is taken into the following scaling

equation.

Final Score = $100+799/(1+exp(-SCOR))**4$, rounded to the nearest integer value.

15   The table below represents the scoring algorithm for the credit data only scorecard.

SCORING VARIABLE		COEFFICIENT
CONSTANT	CONSTANT IS TO BE ADDED AUTOMATICALLY TO EACH APPLICANT'S SCORE	2.20169
ALL904	Multiply by the coefficient	-0.00946328
SRBAC703	Multiply by the coefficient	0.07616756
ALL504B	Multiply by the coefficient	-0.39115484
ALL710A	Multiply by the coefficient	0.24159381
LNILN064	Multiply by the coefficient	-0.20654182
REV601A	Multiply by the coefficient	0.19162188
RTR404	Multiply by the coefficient	-0.00599192
REV504F	Multiply by the coefficient	-0.04240944
BAC901	Multiply by the coefficient	0.0055761
SRALL804	Multiply by the coefficient	-0.19366108
ALL602B	Multiply by the coefficient	-0.17019613
ALL740B	Multiply by the coefficient	-0.16300223
LNFIL022	Multiply by the coefficient	-0.28859933

For scorecard 2 (debit bureau data only), the attributes required in the scorecard are as

follows.

Name	Label	Description
SCON999	SC: # OPEN LAST 3 YEARS	Total number of open scan items over the past three years
CPUNABA	# DIFFERENT BANKS	Total number of check orders from different financial institutions
IV365	IV: # OF INQS LAST 2-365	Total number of inquiries 2 to 365 days ago
SCAN999	SC: # ALL LAST 3 YEARS	Total number of scan items over the

		past three years
CVT0180S	CV: # OF CLOSURES AT 2-180 DAYS	Total number of closures 2 to 180 days ago
CVD0365S	CV: # OF HISTORIC CLOSURES 181-365 DAYS	Total number of closures 181 to 365 days ago
CVD0730S	CV: # OF HISTORIC CLOSURES 366-730 DAYS	Total number of closures 366 to 730 days ago
CVD1095S	CV: # OF HISTORIC CLOSURES 731-1095 DAYS	Total number of closures 731 to 1095 days ago
CVD1460S	CV: # OF HISTORIC CLOSURES 1096-1460 DAYS	Total number of closures 1096 to 1460 days ago
CVD1825S	CV: # OF HISTORIC CLOSURES 1461-1825 DAYS	Total number of closures 1461 to 1825 days ago
IVFI180	IV: # OF INQS DIFF FI LAST 2-180	Total number of inquiries from different financial institutions 2 to 180 days ago
IVDBTWN	IV: AVG. DAYS BETWEEN INQUIRIES	Average number of days between inquiries
CPCORD90	CP: # OF CHECK ORDERS LAST 90 DAYS	Total number of check orders in the last 90 days
CPMNBETW	CP: MIN DAYS BETWEEN CHECK ORDERS	Minimum number of days between check orders
SCALAST	SC: DAYS SINCE LAST ALL ITEMS	Number of days since last scan item

Again, to implement the segmentation logic, the following variables are created.

VARIABLE: **SCON999B**
DESCRIPTION: SCP: # ALL LAST 3 YEARS ≥ 1
LOGIC: IF (SCON999 $\geq$ 1) THEN SCON999B = 1
ELSE SCON999B=0

VARIABLE: **CPUNABAB**
DESCRIPTION: CP: # OF DIFFERENT BANKS 1-2
LOGIC: IF (CPUNABA $\geq$ 1 AND CPUNABA $\leq$ 2) THEN CPUNABAB = 1
ELSE CPUNABAB = 0

VARIABLE: **SCAN999B, SCAN999C, SCAN999D**
DESCRIPTION: SCA: # ALL LAST 3 YEARS: 1
SCA: # ALL LAST 3 YEARS: 2-3
SCA: # ALL LAST 3 YEARS: 4+
LOGIC: SCAN999B = 0
SCAN999C = 0
SCAN999D = 0
IF SCAN999 = 1 THEN SCAN999B = 1
ELSE IF (SCAN999 $\geq$ 2 AND SCAN999 $\leq$ 3) THEN SCAN999C = 1
ELSE IF (SCAN999 $\geq$ 4) THEN SCAN999D = 1

VARIABLE: **CVD0365A**
DESCRIPTION: CLOSURE: 181-1825 DAYS
LOGIC: IF (CVD0365S = 1 OR CVD0730S = 1 OR CVD1095S = 1 OR CVD1460S = 1 OR CVD1825S =1) THEN CVD0365A =1
ELSE CVD0365A = 0

VARIABLE: **IVDBTWNA, IVDBTWNB**
DESCRIPTION: IV: AVG. DAYS BETWEEN INQUIRIES: 0-90
IV: AVG. DAYS BETWEEN INQUIRIES: 90+
LOGIC: IVDBTWNA = 0
IVDBTWNB = 0
IF (IVDBTWN $\geq$ 0 AND IVDBTWN $\leq$ 90) THEN IVDBTWNA = 1
ELSE IF (IVDBTWN $\geq$ 91) THEN IVDBTWNB = 1

VARIABLE: **CPMNBETD**
DESCRIPTION: CP: MIN DAYS BETWEEN CHECK ORDERS: 180+
LOGIC: IF (CPMNBETW $\geq$ 180) THEN CPMNBETD = 1
ELSE CPMNBETD = 0

VARIABLE: **SCALASTB**
DESCRIPTION: SCA: DAYS SINCE LAST ALL ITEM: 0-356 DAYS
LOGIC: IF (SCALAST $\geq$ 0 AND SCALAST $\leq$ 365) THEN SCALASTB = 1
ELSE SCALASTB = 0

VARIABLE: **QCPCOR90**
DESCRIPTION: CP: # CHECK ORDERS LAST 90 DAYS-SQRT
LOGIC: SQRT(CPCORD90)

The table below represents the scoring algorithm for the debit data only scorecard.

SCORING VARIABLE		POINTS
CONSTANT	CONSTANT IS TO BE ADDED AUTOMATICALLY TO EACH APPLICANT'S SCORE	1.5919
SCON999B	0 1 OR MORE	0 -.6233
IV365	Multiply by the coefficient	-.1537
CPUNABAB	0 1 TO 2 3 OR MORE	0 .6526 0
SCAN999B SCAN999C SCAN999D	0 1 2 TO 3 4 OR MORE	0 -.5349 -.6632 -.7182
CVT0180S	Multiply by the coefficient	-.6266
CVD0365A	PREVIOUS DAY TO 180 181 OR MORE	0 -.4825
IVFI180	Multiply by the coefficient	-.1498
IVDBTWNA IVDBTWNB	. 0 TO 90 91 OR MORE	0 -.2234 -.1215
QCPCOR90	Multiply by the coefficient	-.3047
CPMNBETD	. 0 TO 179 180 OR MORE	0 0 .5656
SCALASTB	. 0 1 TO 365 366 OR MORE	0 0 -.2051 0

5 A period ('.') denotes a missing value for a particular attribute. The algorithm outputs the

variable SCOR, which is taken into the following scaling equation.

Final Score = 100+799/(1+exp(-SCOR))**4, rounded to the nearest integer value.

For scorecard 3 (credit and debit bureau), the attributes required in the scorecard are as

follows:

Name	Label	Description
ALL001	TTL TRADE	Total number of open, paid, or closed trades
ALL062	TTL PRESENT-SAT RPTED6	Total number of trades presently current reported within 6 months of the profile date
ALL075	TTL DEL-GE30	Total number of trades ever 30 or more days delinquent or derogatory
ALL504	WORST-EVER-OPEN36	Worst status ever on trades opened within 36

		months of the profile date
ALL602	WORST-NOW OPEN OPEN24	Worst present status on open trades opened within 24 months of the profile date
ALL703	AVG-AGE	Average age, in months, of all trades
ALL710	AGE-RECENT-SAT OPEN>6	Months since most recent satisfactory status on any trade opened more than 6 months
ALL903	PERCENT 30+ (OPC)	Percent of profile consisting of trades 30 or more days delinquent or derogatory
ILN022	TTL OPEN12 INSTALL	Total number of installment trades opened within 12 months of the profile date
ILN064	TTL PRESENT-GE30 INSTALL	Total number of installment trades presently 30 or more days delinquent or derogatory
REV002	TTL TRADE-OPCI REV	Total number of open, paid, closed, or inactive revolving trades
REV504	WORST-EVER-OPEN36 REV	Worst status ever on revolving trades opened within 36 months of the profile date
CVT1825S	CV: # OF HISTORIC CLOSURES 2-1825 DAYS	Total number of closures 2 to 1825 days ago
IV365	IV: # OF INQS LAST 2-365	Total number of inquiries 2 to 365 days ago
SCAN999	# ALL LAST 3 YEARS	Total number of scan items over the past three years
SCON999	# OPEN LAST 3 YEARS	Total number of open scan items over the past three years

To derive the credit and debit combined scorecard, the algorithm establishes the attributes as follows:

5
```
ALL703=MIN(ALL703,240);
ILN064=MIN(ILN064,25);
IV365=MIN(IV365,10);
ALL062=MIN(ALL062, 25);
ILN022=MIN(ILN022, 10).
```

10   The attributes and attribute caps are converted using the following mathematical functions:

```
LNALL703=LOG(ALL703+1);
SCAN999A=SCAN999=0;
SRALL903=SQRT(ALL903);
```
15
```
LNILN064=LOG(ILN064+1);
SRIV365=SQRT(IV365);
ALL504D=ALL504>60;
ALL710B=(ALL710<=24);
SCON999A=(SCON999=0);
```
20
```
REV504F=REV504>120;
ALL602B=ALL602>1.
```

Additionally, the algorithm establishes or identifies false zero relationships using the following algorithm:

IF REV504F=0 AND REV002=0 THEN REV504F=1.

The scoring algorithm then calculates the score.

SCOR=
+   0.83475
+   (0.38888396   *   LNALL703)
+   (0.52751826   *   SCAN999A)
-    (0.15296523   *   SRALL903)
-    (0.21593754   *   LNILN064)
-    (0.28475832   *   SRIV365)
-    (0.12155948   *   ALL504D)
+   (0.10062759   *   ALL710B)
+   (0.18870077   *   SCON999A)
-    (0.25754947   *   CVT1825S)
+   (0.04657684   *   ALL062)
-    (0.06580746   *   ILN022)
-    (0.12498866   *   REV504F)
-    (0.27472889   *   ALL602B).

The above algorithm outputs the variable SCOR, which is taken into the following scaling equation.

Final Score = 100+799/(1+exp(-SCOR))**4, rounded to the nearest integer value.

The table below represents the scoring algorithm for the blended scorecard.

SCORING VARIABLE		COEFFICIENT
CONSTANT	CONSTANT IS TO BE ADDED AUTOMATICALLY TO EACH APPLICANT'S SCORE	0.83475
LNALL703	Multiply by the coefficient	0.38888396
SCAN999A	Multiply by the coefficient	0.52751826
SRALL903	Multiply by the coefficient	-0.15296523
LNILN064	Multiply by the coefficient	-0.21593754
SRIV365	Multiply by the coefficient	-0.28475832
ALL504D	Multiply by the coefficient	-0.12155948
ALL710B	Multiply by the coefficient	0.10062759
SCON999A	Multiply by the coefficient	0.18870077
CVT1825S	Multiply by the coefficient	-0.25754947
ALL062	Multiply by the coefficient	0.04657684
ILN022	Multiply by the coefficient	-0.06580746
REV504F	Multiply by the coefficient	-0.12498866
ALL602B	Multiply by the coefficient	-0.27472889

The score or scores are sent back to the application server 22 where they are compared with the policy rules and guidelines of the financial institution to either accept or deny the financial account application.

5   In a preferred embodiment, a range is set for the scores so that: if the score is below the financial institution's "deny limit," a "deny applicant" code is returned to the financial institution; if the score is above the financial institution's "accept limit," an "accept applicant" code is returned to the financial institution; and if the score is between the "deny limit" and the "accept limit," then a "review" code is returned to the financial

10   institution. If a "review" code is generated, the financial institution may wish to examine the application or applicant in greater detail. If the application is accepted, then the score or scores are compared to the financial institution's cross-selling guidelines to determine whether and what products and services of the financial institution should be offered to the applicant. An electronic report is sent to the financial institution advising the institution of

15   the results of the evaluation.

      Figure 2 is a flowchart illustrating the decisioning process 100 of the network 10 shown in Figure 1. The information acquired by the application server 22 is compared 104 against the policy rules (or exclusions) 108 and financial account application evaluation guidelines (or reviews) 112. If the data indicates (by comparison at 116) that the applicant

20   does not comply with one of the policy rules, then a fail code is issued 120 to the financial institution indicating that the applicant should be denied the account and the process is terminated 122. If the rules are met then the application server 22 issues a pass code 124. At the same time that the policy rules are being evaluated against the data, the application server 22 is comparing 128 the data with the financial account application evaluation

25   guidelines. If the data does not meet the guidelines, then a code is issued 132 to the financial institution indicating that the application should be reviewed in greater detail. If the data meets the guidelines, then a pass code is issued 136, and (provided the pass code is issued for the policy rules evaluation) the application server 22 proceeds 138 to evaluate the credit bureau data against the credit policy exclusions 140 and credit review guidelines

30   144 provided by the financial institution. If the applicant's data from the credit bureau indicates (by comparison at 148) a violation of the financial institution credit policy exclusions, then the application server 22 issues a code 152 to the financial institution indicating that the application should be declined and the process is terminated. Alternatively, if the credit policy exclusions are not violated by the credit bureau data, then

the application server 22 continues 156 with the data evaluation process. At the same time that the credit policy exclusions are being compared with the credit bureau data, the application server 22 is comparing 160 the credit review guidelines with the credit bureau data. If both the credit policy exclusions and credit review guidelines are satisfied by the

5   credit bureau data, then the application server 22 proceeds 164 with the evaluation process. If the data does not meed the credit review guidelines, then a code is issued 168 to the financial institution indicating that the application should be reviewed in greater detail. However, even if the credit review guidelines are not satisfied, the financial institution may opt to continue 172 with the evaluation process. Alternatively, the process is

10   terminated 122. If both the credit policy exclusions and credit review guidelines are satisfied, the application server 22 executes the scoring model (or risk model algorithm) 176 to generate the score or scores for the applicant. The score or scores is/are compared 180 against financial institution past/fail criteria. If the applicant fails, then the application server 22 issues 184 a decline code to the financial institution again indicating that the

15   applicant should be declined and the process is terminated 122. Alternatively, if the applicant's score passes the financial institution criteria, the score is reviewed 188 to determine whether the applicant failed any policy reviews. If so, then the application server 22 issues 192 to the financial institution a code indicating that the application should be reviewed in greater detail and the process is terminated 122. If the consumer did

20   not fail to satisfy any credit review guideline, then the application server 22 generates a code 196 indicating that the financial institution should accept the application and offer the product applied for (such as a demand deposit account (DDA)) to the applicant. Additionally, the application server 22 determines 200 whether the financial institution is offering cross-selling products and, if so, which products 204. If not, the process

25   terminates 122. However, if the financial institution is offering cross-selling products, the applicant data and score or scores are compared 208 with the financial institution pass/fail criteria for such products. If the data and score or scores do not meet the criteria, then the application server 22 issues a fail code 212 to the financial institution indicating that no cross-selling products are to be offered to the applicant and the process terminates 122.

30   Alternatively, if the applicant passes the criteria, the application server 22 issues a code 216 to the financial institution indicating that the product should be offered to the applicant and that the financial institution should invite the applicant to apply for that product. The process then terminates 122.

Various features and advantages of the invention are set forth in the following claims.

CLAIMS

1.   A method of automatically evaluating a financial account applicant for a financial institution, the method comprising the acts of:

accessing credit bureau data for the applicant;

accessing account information for the applicant;

generating a score for the applicant based on the credit bureau data and the account information; and

determining whether to open the financial account based on the score.

2.   A method as set forth in claim 1 wherein the act of determining whether to open the financial account includes the acts of establishing electronic guidelines for the financial institution and comparing the guidelines against the score to evaluate whether to accept the application.

3.   A method as set forth in claim 1 and further comprising the act of establishing electronic guidelines for the financial institution and comparing the guidelines against the score to evaluate whether to offer additional products and services of the financial institution to the applicant.

4.   A method as set forth in claim 1 and further comprising the act of accessing demographic data for the applicant and wherein the act of generating the score includes the act of basing the score on the demographic data.

5.   A method as set forth in claim 4 wherein the demographic data includes at least a one of household income, home ownership, and education level.

6.   A method as set forth in claim 1 and further comprising the act of performing a preliminary financial account information database search.

7.   A method as set forth in claim 6 and further comprising the act of denying the applicant if the preliminary financial account database search establishes that the applicant had a previous financial account closed "for cause."

8. A method as set forth in claims 6 and further comprising the act of denying the applicant if the preliminary financial account database search establishes that the applicant has submitted more than a specified number of financial account applications to financial institutions within a given period of time.

5

9. A computer-readable medium storing computer-readable instructions for evaluating a financial account applicant, the instructions directing the computer to perform the acts of:

accessing credit bureau data for the applicant;

10 accessing account information for the applicant;

generating a score for the applicant based on the credit bureau data and the account information; and

determining whether to open the financial account based on the score.

15 10. A method as set forth in claim 1 wherein the act of determining whether to open the financial account includes the acts of establishing electronic guidelines for the financial institution and comparing the guidelines against the score to evaluate whether to accept the application.

20 11. A method as set forth in claim 1 and further comprising the act of establishing electronic guidelines for the financial institution and comparing the guidelines against the score to evaluate whether to offer additional products and services of the financial institution to the applicant.

25 12. A method as set forth in claim 1 and further comprising the act of accessing demographic data for the applicant and wherein the act of generating the score includes the act of basing the score on the demographic data.

13. A method as set forth in claim 4 wherein the demographic data includes at 30 least a one of household income, home ownership, and education level.

14. A method as set forth in claim 1 and further comprising the act of performing a preliminary financial account information database search.

15.   A method as set forth in claim 6 and further comprising the act of denying the applicant if the preliminary financial account database search establishes that the applicant had a previous financial account closed "for cause."

16.   A method as set forth in claims 6 and further comprising the act of denying the applicant if the preliminary financial account database search establishes that the applicant has submitted more than a specified number of financial account applications to financial institutions within a given period of time.

17.   A system for automatically evaluating a financial account applicant, the system comprising:

a system server including a software program for evaluating applicant credit bureau information and applicant account information;

a credit bureau database connected to the system server for providing credit bureau data to the software program;

a financial account database connected to the system server for providing financial account information to the software program; and

a financial institution computer connected to the system server to provide applicant information to the system server thereby allowing the system server to retrieve applicant credit bureau information and applicant financial account information and evaluate whether to open the account for the applicant.

ABSTRACT

A method of and apparatus for automatically evaluating a financial account applicant for a financial institution. The method includes accessing credit bureau data for the applicant, accessing account information for the applicant, generating a score for the applicant based on the credit bureau data and the account information and determining whether to open the financial account based on the score. The apparatus is a system, including both hardware and software components for effecting the method.

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Fig. 1

100

104
POLICY REVIEWS
108 — POLICY EXCLUSIONS | POLICY REVIEWS — **112**

116 PASS/FAIL ?
FAIL → **120** ASSIGN CONSUMER DECLINE STRATEGY CODE → A
PASS → **124**

128 PASS/FAIL ?
FAIL → **132** ASSIGN CONSUMER REVIEW STRATEGY CODE → A
PASS

136

138
CREDIT POLICIES
140 — CREDIT POLICY EXCLUSIONS | CREDIT POLICY REVIEWS — **144**

148 PASS/FAIL ?
FAIL → **152** ASSIGN CONSUMER DECLINE STRATEGY CODE → A
PASS → **156**

160 PASS?
NO → **168** ASSIGN CONSUMER REVIEW STRATEGY CODE
YES → **164**

RISK MODEL

CONTINUE ?
YES
NO → A
172

176

180 PASS/FAIL CRITERIA?
FAIL → **184** ASSIGN CONSUMER DECLINE STRATEGY CODE → A
PASS

188 DID CONSUMER FAIL ANY POLICY REVIEWS ?
YES → **192** ASSIGN CONSUMER REVIEW STRATEGY CODE → A
NO

196 ASSIGN CONSUMER ACCEPT STRATEGY CODE FOR DDA PRODUCT OFFER

200 IS THE FI OFFERING CROSS-SELL/ INVITATION TO APPLY PRODUCTS ?
NO → PROCESS ENDS
A → PROCESS ENDS
122
YES → **204** TARGET CROSS-SELL PRODUCTS

208 PASS/FAIL CROSS-SELL CRITERIA ?
PASS
FAIL → **212** NO CROSS-SELL OFFER → A

ASSIGN CONSUMER CROSS/SELL INVITATION TO APPLY STRATEGY CODE → A

Fig. 2